



F3 Wireless Schematics Review

MS02: Radio Receiver Review

Radio receiver performance issues are the most common and hardest problems to fix in developing any wireless product. They are one of the most common causes of market acceptance failure for wireless products. “The wifi has awful range.” “The GPS only works in the best conditions and takes a long time to lock.” “My phone has 4 bars but my cellular product can’t see any towers.” What your user/customer sees is a product whose wireless performance is poor, intermittent or unpredictable. These problems are often situational, use-case and time dependent - which makes them time consuming to diagnose.

Customer Deliverables

The schematics review deliverable is a written list of specific feedback so you can understand potential risks and mitigate unintentional RF spurious emissions or receiver interference. Radio receiver performance schematic review is a service where one of the F3 Wireless RF engineers reviews your schematics and provides feedback based on our extensive experience in dealing with receiver interference. You’ll get a written list of specific feedback for each section of your schematic. This service is limited in scope to 1 PCB with 1-30 placements and a maximum of 4 radios. However more complex devices can be accommodated as described in the service data sheet. With this knowledge, you’ll know what to look for and not be surprised late in the project by something you didn’t know would be a problem.

<p>Some examples that cause problems:</p> <ul style="list-style-type: none">• Transmitters• CPU clocks and PLLs• Memory buses• Communication interfaces• Switching power supplies• AC control circuits	<p>This service will help you:</p> <ul style="list-style-type: none">• Know your sources of risk before you build your first prototype• Have specific mitigations in place from the start to minimize what has to be fixed later• Have an unbiased source for assistance for your whole device, not just specific parts
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MS02: Radio Receiver Review Report Example

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1. Introduction

F3 Wireless has been commissioned to perform schematic reviews for improved receiver sensitivity. The schematics have been reviewed and recommendations are provided.

2. References

Document Name	Description	Date
	Schematics	
	Bill of Materials	



3. System Description

The xxx device hosts several radios: LTE, GPS and BLE.

4. RF Review

The schematics have been reviewed for RF best practices. Our recommendations are based on years of experience on working with IoT devices and knowing what it takes to build a successful wireless product with good receiver sensitivity. It is strongly encouraged that all recommendations are followed.

Schematic Review

- List of product specific recommended changes

5. Conclusion

In summary...